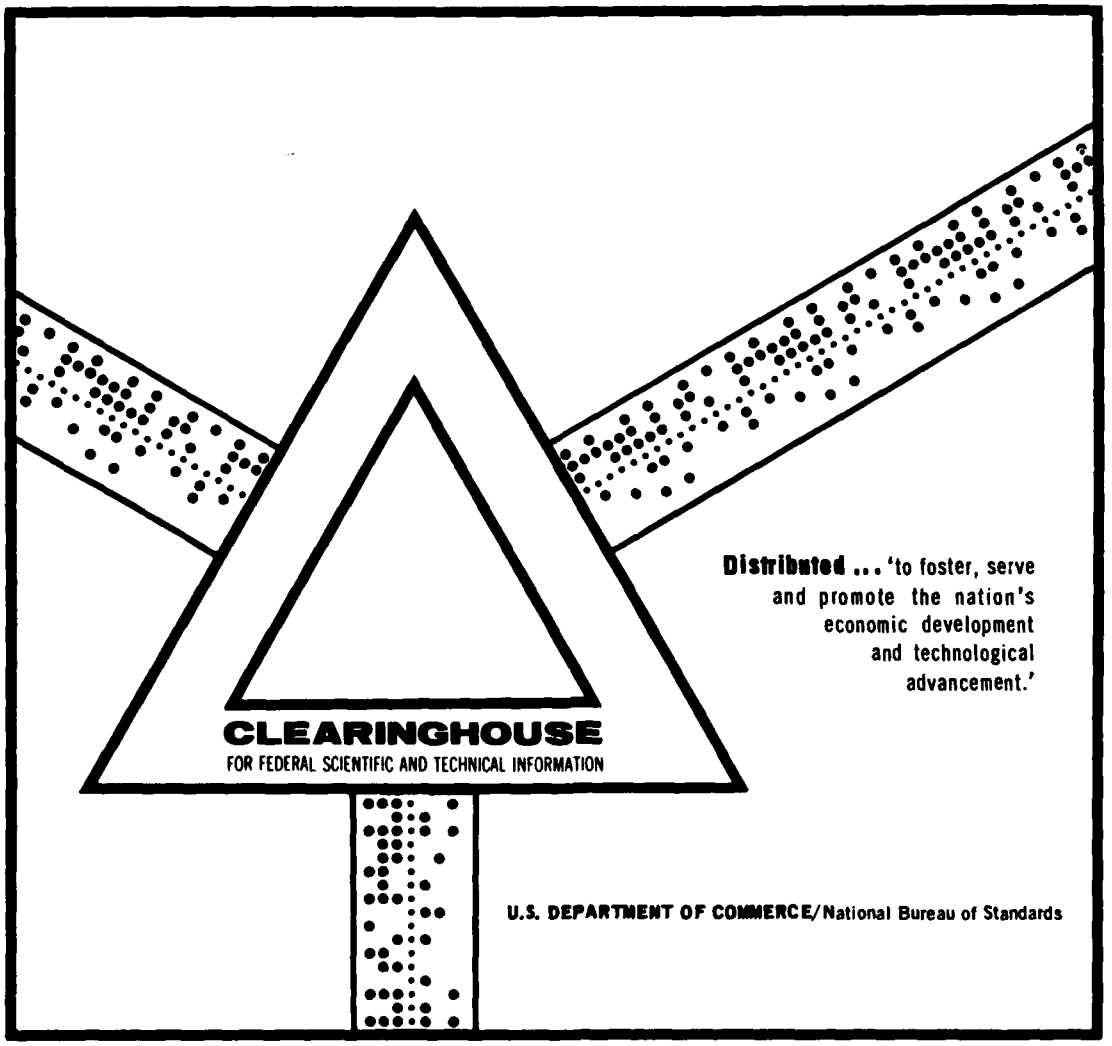
CLIMATOLOGICAL SUMMARIES: VISIBILITIES BELOW 1/2 MILE AND CEILINGS BELOW 200 FEET. VOLUME 31. PHILADELPHIA, PENNSYLVANIA. INTERNATIONAL AIRPORT

National Weather Records Center
Asheville, North Carolina

June 1969



SRDS Report No. RD-69-22, VOL. (31)

FINAL REPORT

Contract No. FA-67-WAI-129
Project No. 197-641-01R

CLIMATOLOGICAL SUMMARIES

VISIBILITIES BELOW 1/2 MILE AND CEILINGS BELOW 200 FEET

Volume 31

PHILADELPHIA, PENNSYLVANIA INTERNATIONAL AIRPORT

June 1969

Prepared for

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Systems Research & Development Service

by

U.S. DEPARTMENT OF COMMERCE
Environmental Science Services Administration
ENVIRONMENTAL DATA SERVICE
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Asheville, N.C.

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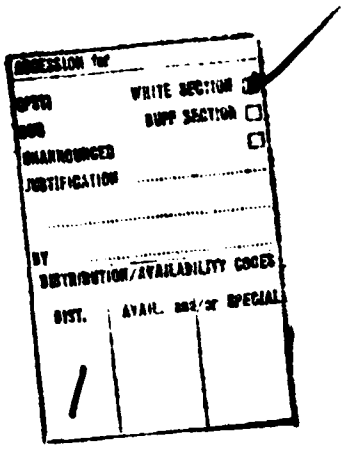
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CLIMATOLOGICAL SUMMARIES

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JUNE 1969

This report has been prepared by U. S. Department of Commerce, Environmental Science Services Administration, Environmental Data Service, National Weather Records Center, Asheville, N.C. for the Systems Research and Development Service, Federal Aviation Administration, under Contract No. FA-67-WAI-129.

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2. 1400-2159 Local Standard Time
3. 2200-0659 Local Standard Time
4. All Hours

INTRODUCTION

The tables contained herein have been prepared and organized for use in evaluating the cost/benefits of all weather landing systems and fog dissipation techniques. Thus, the time intervals of duration of the categories of weather are significant in determining the times of the delay, diversion or cancellation of an aircraft flight resulting from a restricted weather category. This information together with the number and types of aircraft affected by the restricted weather and the costs of a delay, diversion or cancellation combine to provide the total costs resulting from the weather restrictions.

Climatological summaries have been prepared for 41 airports. Their location and associated volume numbers are listed in Table A.

ENVIRONMENT AND INSTRUMENTATION

PHILADELPHIA, PENNSYLVANIA

INTERNATIONAL AIRPORT

Philadelphia International Airport is located on rather flat bottom land about 1 mile northwest of the Delaware River. At this point the river is about 1 mile wide and flows in a southwesterly direction. The land begins to rise about 2 miles to the west and northwest of the airport and becomes a gently rolling surface with some elevations reaching to a height of 200 feet within a distance of about 5 miles from the station.

The tables in this publication are based on a 10-year period, January 1, 1956-December 31, 1965. Ceiling heights were measured by ceilometer throughout the period. Transmissometer (750 ft. baseline) was commissioned on runway 09 May 3, 1957. Location of the airport weather station, its elevation, and the height of wind instrumentation during the period were as follows:

From	To	Lat. N.	Long. W.	Height of Wind Instrument Feet above ground	Station Elevation Feet above MSL
1- 1-56	12-31-58	39° 53'	75° 15'	120	13
1- 1-58	8-19-59	39° 53'	75° 15'	120	13
8-20-59	12-31-65	39° 53'	75° 15'	20	5

NATURE OF DATA

The data used in the preparation of the climatological tables were extracted from 10 years of WBAN 10-A forms from January 1956 through December 1965. There were two exceptions: The data for Dulles International covered the period January 1963 through December 1965 and for Kansas City-Mid-Continent the period July 1957 through December 1965. All data (Record, Special, Local, Check observations)* were recorded on punched cards to the hour and minute whenever a change occurred in the ceiling, surface visibility, present weather, runway visual range or runway visibility during the time the ceiling was less than 200 feet and/or the surface visibility was less than 1/2 mile. The observation which ended a category of the above conditions was punched and if this observation was not a Record observation, the next Record observation was punched. The elements transcribed were: the time in hours and minutes, ceiling, surface visibility, tower visibility, present weather, temperature, dew-point, surface wind, altimeter setting and remarks concerning runway visual range and runway visibility.

These data should prove to be a valuable source for additional studies where low visibilities are considered.

Runway visual range (RVR) is the operational weather criteria for airport landing systems. The limits of visibility conditions for categories of aircraft operations are presented in Table B. Only Cat. II criteria are currently operational. Because RVR as such, is not available on a uniform basis for the station and period of record under study, visibilities and ceilings were used for delineating categories of weather minimums for landing and take-off operations. The determination of RVR would require:

1. The light setting of the edge lights,
2. the background lighting,
3. the location with respect to runway,
4. a special analyzer to integrate the transmissiometer readings etc.

This information has not often been recorded with the transmissiometer data.

* Except Kansas City - Mid-Continent. Only Record (hourly) observations were taken during the period of record at this station; 16 hours per day (0700-2200) through November 1957 and 24 hours per day December 1957 through December 1965.

EXPLANATION OF TABLES

All the tables of climatological summaries except Table I are based on the reported visibilities of less than 1/2 mile and/or ceilings less than 200 feet.

The tables of climatological summaries in these publications include:

(1) reported visibility and ceiling values versus time intervals of duration.

(2) weather categories of aircraft landing systems based on their relationship to ceiling and visibility as presented in Table C, versus intervals of duration. This is Table X only.

(3) percentage frequency of wind direction versus wind speed for each category of aircraft landing system using the relationship of Table C for Record observations only. These are presented for 13 stations only. This is Table XI only.*

(4) weather categories of landing systems based on their relationship to ceilings and visibility as presented in Table E, versus intervals of duration. These tables are also summarized on the basis of wind speed and temperature values.

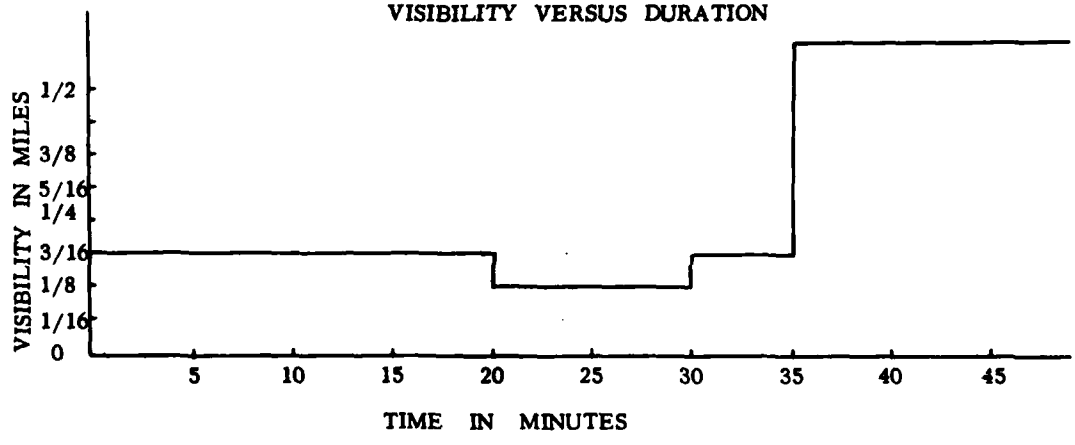
* These stations are:
Los Angeles International, Oakland International, Chicago O'Hare, San Francisco International, Greater Buffalo International, Washington National, Washington Dulles International, Atlanta, Newark, New York J. F. K., Philadelphia International, New York La Guardia, Cleveland Hopkins International

REPORTED VISIBILITY AND CEILING VALUES VERSUS INTERVALS OF DURATION

Nine summaries are presented. In Tables I - V the values represent the individual incidents of specified ceiling and visibility. Thus, in Table III 3/8 mile visibility with 100 ft. ceiling occurs with a specific frequency for each interval of duration.

In Tables VI to IX, the frequency of occurrence represents visibilities for specific conditions of ceilings at or below the listed visibility. They are cumulative incidents wherein the total time at or below a certain visibility value for the ceiling value specified is considered as one incident. Thus, if in Table VII there are 172 incidents of 3/8 mile in the interval of 1-15 minutes, it represents 172 times during the 10-year period that visibilities 3/8 mile or less with ceilings 100 feet.

Another example which combines the entries in the individual and the cumulative tables is as follows: If visibility is distributed as shown in the figure, for ceiling 100 feet, if for 20 minutes the visibility was 3/16 then went to 1/8 for 10 minutes, then went to 3/16 for 5 minutes and then to greater than 1/2 mile visibility in Table III there would be 2 counts for 3/16, one under 16-30 minutes and one under 1-15 minutes; and one count for 1/8 under 1-15 minutes; whereas, in the cumulative table for visibilities at or below a given visibility with 100-foot ceilings - Table VII in the 3/8, 5/16, 1/4 and 3/16 mile categories there would be one count under 31-45 minutes (actually 35 minutes) and one count in 1/8 mile category under 1-15 minutes (actually 10 minutes).



To estimate the total time of occurrence for a particular interval of time for the period of record one multiplies the average of time period by the frequency of occurrence of the specified conditions for this time period. Thus, if visibility of 3/8 mile with ceiling 100 feet (Table III) occurred 14 times between 16-30 minutes, the estimated total time would be 14 x 23 or 322 minutes.

WEATHER CATEGORIES OF AIRCRAFT LANDING SYSTEMS VERSUS INTERVALS OF DURATION BASED ON TABLE D

A single table (Table X) based on Table C for the period of record is presented. Table C is based on the current practices relating RVR to meteorological visibilities as shown in Table D.

Table X is in three sections:

Xa. Frequency of occurrence of the landing categories versus the indicated duration intervals:

In this summary Categories II, IIIa, IIIb, and IIIc are represented by the frequency of these conditions occurring during the specified intervals.

In Category II + III the frequency represents the visibilities and ceilings at or below Category II weather, i. e., below 200 feet and/or 1/2 mile for a continuous period of time.

In Category III, the number of occurrences represent the frequency the weather was in in Category IIIa and IIIb/c i.e., observation below 1/4 mile and equal to and above 1/4 mile when the ceiling is reported as zero for a continuous period of time.

Xb. Total time in each duration versus the duration intervals in hours and tenths of hours. The entries in this table are arrived by adding the times in minutes associated with the frequencies above. These totals are converted to hours and tenths. This table also contains the percentage of time for the 10-year period of observations of specified duration intervals, i. e., 1-90, 91-all, 1-all. This table is derived by dividing the total time under each category for the specified duration interval by the total number of hours. Thus the percentage value for Category II + III the 1-all group (last column, 4th value down) represents the frequency of occurrence for the ten-year period in percent of visibility and ceilings below 1/2 mile and/or 200 feet.

Xc. Average time in each duration versus the duration intervals.

This table is derived by dividing the total time in minutes of each item in Table Xb by the frequency of occurrence in Table Xa.

WIND DIRECTION VERSUS SPEED BY PERCENTAGE FREQUENCY (Table XI)

Table XI (for 13 stations) (unnumbered on summaries) show the percentage distribution of the different categories in accordance with Table D by wind direction to 16 points versus specified speed intervals. These categories, II, IIIa and IIIb/c, are divided into 2100-0500 and 0600-2000 hour groups making a total of six sub-tables.

Only the hourly (Record) observations when Category II or below conditions exist are used in these summaries. The percentages are determined by dividing the number of hourly observations which were recorded during the entire period of record for the indicated hour group. The percentage figures can be combined to obtain percentages for the quadrants of different speed intervals.

WEATHER CATEGORIES OF LANDING SYSTEMS VERSUS INTERVALS OF DURATION BASED ON TABLE E

Nine tables XII - XXI are presented for the ten-year period. These tables are presented in three sections:

a. Frequency of occurrences of landing categories versus duration intervals:

Categories II, IIIa, IIIb, and IIIc are represented by the total time for the specified hour group that these conditions occur during the indicated intervals.

In Categories II + III the frequency represents the visibilities and ceilings at or below Category II weather e. g., below 2400 RVR. In Category III the frequency represents the visibilities at or below Category III weather e. g., below 1200 RVR.

b. Total time in each duration versus the duration intervals hours and tenths.

The entries in this table are derived by adding the time in minutes associated with the frequency above and converting them to hours and tenths.

c. Average time in each duration versus the duration intervals.

This table is derived by dividing the total time in minutes of each value in b by the corresponding frequency of occurrence in a.

In these tables, since the period of duration is the important element, each incident of weather is attributed to the hour group during which it began. Thus, if Category IIIa weather began in the 22-06 hour group and continued into the 07-13 hour group the total time is placed in the 22-06 group. It is probable, then, that the incidence of the various categories may be overestimated in the 22-06 group. The totals appearing in the all hour group, however, are correct.

The sum of Categories IIIa, IIIb, and IIIc in the all-hour groups and sometimes in the other hour groups are frequently greater than under Cat. III. This results from the addition of 5% of observations of 3/16 mile or greater with ceiling 100 feet added to Cat. IIIa, whereas, this 5% is not included in the Cat. III totals at the bottom of each table.

The difference between Cat. III totals and the sum of Cat. IIIa, IIIb, and IIIc are subtracted from the Cat. II totals for the all-hour group and appears at the end of the Cat. II line with an asterisk. This value is a better estimate of the occurrence of Cat. II weather for the 10-year period.

EXPLANATION OF TABLE E

The relationship of RVR with light setting 5 for a 500' baseline to the meteorological report of visibility, based on the information in Circular N[1/], is given in Table F. This was the basis for establishing the relationships in Table E. The use of the highest setting for the edge lights for approaches in low visibility is the current operational practice. Although the selection of some of the relationships in Table E have been somewhat arbitrary, it can be expected that the observers report of low visibilities and ceilings will be more inexact than the cut off point of these relationships.

1/ Manual of Surface Observations (WBAN). Circular N, Weather Bureau, Washington, D. C. NAVAIR 501D505, July 1968 (AD672-366)

ACKNOWLEDGEMENTS

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This is one of 41 volumes of Report RD-69-22. The volumes are as follows:

VOL.	CITY	AIRPORT
1.	Anchorage, Alaska	International
2.	Atlanta, Georgia	Atlanta
3.	Baltimore, Maryland	Friendship International
4.	Birmingham, Alabama	International
5.	Boston, Massachusetts	General E. L. Logan International
6.	Buffalo, New York	Greater Buffalo International
7.	Burbank, California	Hollywood-Burbank
8.	Chicago, Illinois	O'Hare International
9.	Cincinnati, Ohio	Greater Cincinnati
10.	Cleveland, Ohio	Cleveland-Hopkins International
11.	Columbus, Ohio	Port Columbus International
12.	Dallas, Texas	Love Field
13.	Dayton, Ohio	James M. Cox Municipal
14.	Denver, Colorado	Stapleton International
15.	Detroit, Michigan	Detroit Metropolitan-Wayne County
16.	Hartford, Connecticut	Bradley International (Windsor Locks)
17.	Houston, Texas	William P. Hobby
18.	Indianapolis, Indiana	Weir Cook
19.	Kansas City, Missouri	Mid-Continent International
20.	Los Angeles, California	International
21.	Louisville, Kentucky	Standiford Field
22.	Miami, Florida	International
23.	Milwaukee, Wisconsin	General Mitchell Field
24.	Minneapolis, Minnesota	Minneapolis-St. Paul International
25.	Nashville, Tennessee	Metropolitan
26.	Newark, New Jersey	Newark
27.	New Orleans, Louisiana	International
28.	New York, New York	John F. Kennedy International
29.	New York, New York	La Guardia
30.	Oakland, California	Metropolitan Oakland International
31.	Philadelphia, Pennsylvania	International
32.	Pittsburgh, Pennsylvania	Greater Pittsburgh International
33.	Portland, Oregon	International
34.	Rochester, New York	Rochester-Monroe County
35.	St. Louis, Missouri	Lambert-St. Louis Municipal
36.	Salt Lake City, Utah	Municipal No. 1
37.	San Francisco, California	International
38.	Seattle, Washington	Seattle-Tacoma International
39.	Syracuse, New York	Clarence E. Hancock
40.	Washington, D. C.	Dulles International
41.	Washington, D. C.	National

TABLE A

LIMITS OF LANDING CATEGORIES

* CAT. II Operations down to minima below 200 feet decision height and 2400 RVR and to as low as 100 feet decision height and 1200 RVR.

** CAT. IIIA Below 100 feet decision height and 1200 RVR and to as low as 50 feet decision height and 700 RVR.

** CAT. IIIB Below 700 RVR to 150 RVR.

** CAT. IIIC No external visual reference.

TABLE B

* Current operational criteria
** Criteria not firm, used for planning purposes

CEILING AND VISIBILITY EQUIVALENTS FOR CATEGORIES OF AIRCRAFT LANDING OPERATIONS CURRENT PRACTICE CRITERIA for Table X and XI

Category II:	Visibility = 1/2 and ceiling = 100
	Visibility = 3/8 and ceiling ≠ 0
	Visibility = 5/16 and ceiling ≠ 0
	Visibility = 1/4 and ceiling ≠ 0
Category III-a:	Visibility = 1/4 and ceiling = 0
	Visibility = 3/16 and all ceilings
	Visibility = 1/8 and all ceilings
Category III-b/c:	Visibility = 1/16 and all ceilings
	Visibility = 0 and all ceilings
Category III:	The sum of IIIa, IIIb, and IIIc

TABLE C

RVR VERSUS VISIBILITY (Current Practice)

METEOROLOGICAL VISIBILITY	RVR EQUIVALENT
Statute Miles (feet)	Feet
3/16 (990 feet)	1200
* 1/4 (1320 feet)	1600
* 1/2 (2640 feet)	2400

TABLE D

* United States Standard for Terminal Instrument Procedures (TERPs), Federal Aviation Agency, September 1966.

CEILING AND VISIBILITY EQUIVALENTS FOR CATEGORIES OF AIRCRAFT LANDING OPERATIONS
Criteria for Tables XII-XXI

	Equivalent Meteorological Observations
Category II Below 2400 ft. RVR to 1200 ft. RVR	All observations with visibilities greater than 3/8 mile with ceiling 100 feet. All observations of 3/8 mile with ceiling not equal to zero. All observations of 5/16 mile with ceiling not equal to zero. All observations of 1/4 mile with ceiling not equal to zero. All observations of 3/16 mile with ceiling not equal to zero.
Category III Category IIIa Below 1200 ft. RVR to 700 ft. RVR	All observations of 1/8 mile. All observations of 3/16 mile or greater with zero ceiling. 5% of observations of 3/16 mile or greater with ceiling 100.
Category IIIb Below 700 ft. RVR to 150 ft. RVR	All observations of 1/16 mile. 50% of all observations of zero miles.
Category IIIc Below 150 ft. RVR	50% of observations of zero miles.

TABLE E

RVR VERSUS METEOROLOGICAL VISIBILITY

Circular N

Reported Meteorological Visibilities Miles (feet)	RVR (500 ft. baseline) at Setting 5 Day	Night	Category
0 (less than 330 feet)	*	*	(IIIc and IIIb)
1/16 (330 feet-650 feet)	*	*	(IIIb)
1/8 (660 feet-980 feet)	1000-1400	*	(IIIb and IIIa)
3/16 (990 feet-1310 feet)	1400-1800	1200-1800	(Cat. II)
1/4 (1320 feet-1640 feet)	1800-2200	1800-2200	(Cat. II)

* No determination of RVR with respect to meteorological visibility.

TABLE F

PHILADELPHIA, INTERNATIONAL

FREQUENCY OF INTERVALS OF DURATION VERSUS CATEGORIES OF VISIBILITIES JANUARY 1956 - DECEMBER 1965

TABLE I. VISIBILITY ≥ 1/2 MILE WHEN CEILING < 200 FEET.

DURATION IN MINUTES											
1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+
49	26	17	14	6	4	1				

TABLE II. (IRRESPECTIVE OF CEILING).

VISIBILITY	DURATION IN MINUTES										
	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+
3/8	119	77	39	18	17	8	5				1
5/16	5	3	2			1	1				
1/4	194	108	59	32	29	11	10	3	2		
3/16	42	24	5	4	7		1				
1/8	61	47	29	22	16	17	8	6	9	4	
1/16	19	22	14	16	17	8	8	5	5	1	
0	3	4	5	3	4	7	8	1	6		1

TABLE III. (CEILING 100 FEET).

VISIBILITY	DURATION IN MINUTES										
	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+
3/8	28	19	5	4	4	1	1				
5/16	1		1								
1/4	41	30	18	12	10	4	3		1		
3/16	11	10	3	2	1						
1/8	24	15	9	13	8	5	4	1	3	2	
1/16	11	8	6	10	5	6	5	1	1		
0	2	2	2	1	1						

TABLE IV. (CEILING ZERO).

VISIBILITY	DURATION IN MINUTES										
	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+
3/8	3										1
5/16											
1/4	17	10	3	1		1					
3/16	5	4	1								
1/8	15	9	7	6	8	5	2	1	3	2	
1/16	4	9	4	3	13	3	4	1	3		
0	1	4	7	1	3	9	5	1	5		1

TABLE V. (CEILING 100 FEET OR ZERO).

VISIBILITY	DURATION IN MINUTES										
	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+
3/8	31	18	5	4	4	1	1				1
5/16	1		1								
1/4	44	37	21	14	11	6	3		1		
3/16	15	12	3	4	1						
1/8	35	20	14	16	9	10	5	6	7	4	
1/16	9	16	8	12	15	6	8	4	4	1	
0	1	2	6	3	4	7	6	1	6		1

TOTAL TIME AT OR BELOW EACH VISIBILITY CLASSED AS ONE INCIDENT
TABLE VI. (IRRESPECTIVE OF CEILING).

VISIBILITY	DURATION IN MINUTES										
	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+
3/8	66	76	40	34	46	30	38	20	39	17	19
5/16	47	47	25	25	36	25	33	20	32	15	15
1/4	46	47	27	23	38	23	32	19	32	15	15
3/16	23	27	23	12	14	25	18	12	22	13	10
1/8	22	29	16	12	13	17	19	12	23	10	10
1/16	9	15	6	9	11	12	12	11	7	7	2
0	3	3	3	4	2	7	7	2	9	1	1

TOTAL TIME AT OR BELOW EACH VISIBILITY CLASSED AS ONE INCIDENT
TABLE VII. (CEILING 100 FEET).

VISIBILITY	DURATION IN MINUTES										
	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+
3/8	55	48	32	25	37	16	12	6	10	1	1
5/16	49	33	28	31	25	14	13	4	10	1	1
1/4	48	34	28	30	25	14	13	4	10	1	1
3/16	34	21	16	18	15	11	9	4	6	1	1
1/8	28	14	15	18	13	10	10	4	5	1	1
1/16	12	9	7	8	4	8	5	2	1		
0	2	2	2	1	1						

TOTAL TIME AT OR BELOW EACH VISIBILITY CLASSED AS ONE INCIDENT
TABLE VIII. (CEILING ZERO).

VISIBILITY	DURATION IN MINUTES										
	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+
3/8	11	18	10	9	10	18	13	6	11	5	3
5/16	11	16	10	9	11	17	13	6	11	5	2
1/4	11	18	10	9	11	17	13	6	11	5	2
3/16	5	13	11	7	13	15	11	5	11	5	2
1/8	6	11	10	7	14	14	11	5	11	5	2
1/16	1	8	8	4	13	7	10	5	8	1	1
0	1	4	6	1	3	9	5	1	5		1

TOTAL TIME AT OR BELOW EACH VISIBILITY CLASSED AS ONE INCIDENT
TABLE IX. (CEILING 100 FEET OR ZERO).

VISIBILITY	DURATION IN MINUTES										
	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+
3/8	26	27	29	21	27	29	20	14	21	11	8
5/16	20	22	24	29	18	22	22	11	22	12	9
1/4	20	22	26	28	17	22	22	11	22	12	9
3/16	14	20	20	12	11	19	17	12	17	10	9
1/8	12	15	17	10	12	16	18	12	17	9	9
1/16	8	11	7	8	13	13	11	8	9	9	2
0	1	1	5	4	3	7	9	2	6		1

TABLE X — PHILADELPHIA, INTERNATIONAL

ALL SEASONS — ALL HOURS — JANUARY 1956 - DECEMBER 1965

FREQUENCY OF OCCURRENCE

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	186	147	87	62	50	25	19	7	9			532	60	592
IIIA	85	58	34	31	20	21	10	9	8	5	1	228	54	282
IIIB/C	13	20	12	14	19	13	11	8	10	5	1	78	48	126
II + III	79	79	48	36	50	30	45	22	34	18	21	292	170	462
III	40	49	24	17	19	28	23	18	22	11	7	145	109	254

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

	TIME IN MINUTES														PERCENTAGE		
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL	1-90	91-ALL	1-ALL
II	33.2	36.6	34.1	35.5	61.6	44.6	48.0	23.7	42.2			260.9	158.6	419.5	.30	.18	.48
IIIA	15.2	22.2	22.0	28.1	26.1	36.2	25.0	32.2	36.9	33.1	8.3	113.5	171.6	285.1	.13	.20	.33
IIIB/C	2.5	8.0	8.1	13.0	24.3	22.4	27.2	27.4	50.8	33.5	14.6	55.8	176.0	231.8	.06	.20	.26
II + III	14.7	29.5	30.3	32.3	63.7	52.2	114.5	75.9	170.6	124.5	228.4	170.4	765.9	936.4	.19	.87	1.07
III	7.2	17.8	16.1	15.2	23.7	47.7	57.5	44.1	111.8	74.4	81.5	79.9	437.0	516.9	.09	.50	.59

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	10.7	23.1	37.3	53.7	73.9	107.0	151.7	203.3	281.6			29.4	158.6	42.5
IIIA	10.7	22.9	38.8	54.4	78.3	103.5	149.7	214.6	276.9	397.0	495.0	29.9	190.7	60.7
IIIB/C	11.6	23.9	40.3	55.7	76.7	103.5	148.5	205.8	304.6	402.2	876.0	42.9	220.0	110.4
II + III	11.2	22.4	37.8	53.9	76.4	104.3	152.6	207.0	301.0	414.9	652.5	35.0	270.3	121.6
III	10.8	23.7	40.3	53.5	74.8	102.2	150.0	213.6	305.0	405.9	698.3	33.1	240.5	122.1

TOTAL OBSERVATION HOURS 87672

PHILADELPHIA, INTERNATIONAL

WIND DIRECTION VERSUS SPEED BY PERCENTAGE FREQUENCY

JANUARY 1956 - DECEMBER 1965

TABLE XI

PERCENTAGE FREQUENCY OF OCCURRENCE

CATEGORY	HOUR GROUP	WIND DIRECTION	CALM	SPEED (KNOTS) 1-5	6-10	11-15	16-20	21+	TOTAL
II	21-05	N		1.0	.5			.5	2.0
		NNE		3.0	1.0	.5		1.5	6.1
		NE			2.0			1.0	3.0
		ENE		5.1	4.5	.5			10.1
		E		3.5	4.0				7.6
		ESE		6.6	3.0				9.6
		SE		6.6	.5				7.1
		SSE		4.0					4.0
		S		3.0	1.5				4.5
		SSW		2.5	1.5				4.0
		SW		4.0	5.1	1.0			10.1
		WSW		5.1	4.0	.5			9.6
		W		1.0	2.0				3.0
		WNW		1.0	1.5				2.5
		NW		1.0					1.0
		NNW		1.0	.5				1.5
		CALM	14.1						14.1
		TOTAL	14.1	48.5	31.8	2.5		3.0	100.0

TOTAL RECORD OBSERVATIONS 198

PERCENTAGE FREQUENCY OF OCCURRENCE

CATEGORY	HOUR GROUP	WIND DIRECTION	CALM	SPEED (KNOTS) 1-5	6-10	11-15	16-20	21+	TOTAL
II	06-20	N		2.7	.9		.9	.4	4.9
		NNE		3.6	1.8		.9	1.8	8.0
		NE		1.8	3.1	1.3	.4	.9	7.6
		ENE		6.7	9.3	3.1	3.1	2.2	20.4
		E		3.6	4.9	.9			9.3
		ESE		1.8	4.4				6.2
		SE		3.1	.4				3.6
		SSE		3.1	.4				3.6
		S		3.6					3.6
		SSW		3.1	1.8	.4			5.3
		SW		2.7	1.8	.4		.4	5.3
		WSW		3.1	6.7		.4		10.2
		W		1.8	.4				2.2
		WNW		.9					.9
		NW		.9	.4				1.3
		NNW		1.3			.4	.9	2.7
		CALM	4.9						4.9
		TOTAL	4.9	43.6	32.4	6.2	6.2	6.7	100.0

TOTAL RECORD OBSERVATIONS 225

PERCENTAGE FREQUENCY OF OCCURRENCE

CATEGORY	HOUR GROUP	WIND DIRECTION	CALM	SPEED (KNOTS) 1-5	6-10	11-15	16-20	21+	TOTAL
IIIA	21-05	N		1.2					1.2
		NNE		3.5	.6				4.1
		NE		4.7				.6	5.2
		ENE		4.4	5.2	1.2			12.8
		E		4.1	4.7				8.7
		ESE		4.1					4.1
		SE		3.5	2.9				6.4
		SSE		2.3					2.3
		S		4.1					4.1
		SSW		2.9	1.2				4.1
		SW		6.4	4.7	.6			11.6
		WSW		3.5	9.9	.6			14.0
		W		2.9	1.7				4.7
		WNW		1.2					1.2
		NW		.6					.6
		NNW		1.2					1.2
		CALM	14.0						14.0
		TOTAL	14.0	52.3	30.8	2.3		.6	100.0

TOTAL RECORD OBSERVATIONS 172

PERCENTAGE FREQUENCY OF OCCURRENCE

CATEGORY	HOUR GROUP	WIND DIRECTION	CALM	SPEED (KNOTS) 1-5	6-10	11-15	16-20	21+	TOTAL
IIIA	06-20	N		2.8	.9				3.7
		NNE		.9					.9
		NE		.9			.9	.9	2.8
		ENE		4.7	7.5	.9		.9	14.0
		E		6.5	5.6				12.1
		ESE		7.5	.9				8.4
		SE		6.5	1.9				8.4
		SSE		3.7	.9				4.7
		S			1.9				1.9
		SSW		.9	.9				1.9
		SW		5.6	4.7				10.3
		WSW		.9	8.4	.9			10.3
		W		3.7	1.9				5.6
		WNW			.9				.9
		NW		3.7					3.7
		NNW						.9	.9
		CALM	9.3						9.3
		TOTAL	9.3	48.6	36.4	1.9	.9	2.8	100.0

TOTAL RECORD OBSERVATIONS 107

PERCENTAGE FREQUENCY OF OCCURRENCE

CATEGORY	HOUR GROUP	WIND DIRECTION	CALM	SPEED (KNOTS) 1-5	6-10	11-15	16-20	21+	TOTAL
IIIB/C	21-05	N		1.9					1.9
		NNE		1.9					1.9
		NE		2.8	.9				3.8
		ENE		6.6	6.6				13.2
		E		1.9	1.9				3.8
		ESE		2.8					2.8
		SE		5.7					5.7
		SSE							
		S		8.5					8.5
		SSW							
		SW		4.7	2.8				7.5
		WSW		5.7	1.9				7.5
		W		4.7	2.8				7.5
		WNW		6.6					6.6
		NW			.9				.9
		NNW							
		CALM	28.3						28.3
		TOTAL	28.3	59.6	17.9				100.0

TOTAL RECORD OBSERVATIONS 106

PERCENTAGE FREQUENCY OF OCCURRENCE

CATEGORY	HOUR GROUP	WIND DIRECTION	CALM	SPEED (KNOTS) 1-5	6-10	11-15	16-20	21+	TOTAL
IIIB/C	06-20	N		2.2					2.2
		NNE		.7					.7
		NE		2.2					2.2
		ENE		5.8	1.4				7.2
		E		5.8	4.3				9.4
		ESE		4.3	2.2				6.5
		SE		5.8					5.8
		SSE		2.2					2.2
		S		3.6	.7				4.3
		SSW		3.6	1.4				5.0
		SW		5.8	4.3			.7	10.8
		WSW		9.4	5.8				15.1
		W		2.9	.7				3.6
		WNW		3.6					3.6
		NW		2.9					2.9
		NNW		.7					.7
		CALM	18.7						18.7
		TOTAL	18.7	59.7	20.9			.7	100.0

TOTAL RECORD OBSERVATIONS 139

PHILADELPHIA, INTERNATIONAL

TABLE XII - ALL CONDITIONS.

0700 - 1300 (25871 OBSERVATION HOURS) JANUARY 1956 - DECEMBER 1965

FREQUENCY OF OCCURRENCE

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	67	42	36	21	18	2	11	1	2			184	16	200
IIIA	29	19	13	9	5	2	1		1			75	4	79
IIIB	10	5	5	12	2	4	6	2	1			34	13	47
IIIC		1			1	2	2					3	4	7
II + III	29	19	17	10	12	3	10	5	8	5	2	87	31	118
III	13	9	4	6	2	4	5	3	6	1		34	19	53

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	11.5	15.9	22.4	18.9	22.9	4.0	27.9	5.6	10.4			91.6	45.8	137.4
IIIA	4.9	7.4	8.2	7.9	6.2	3.5	2.1		4.1			33.3	9.7	43.0
IIIB	1.8	1.8	3.1	11.0	2.3	6.4	15.9	7.0	5.8			20.0	34.4	54.1
IIIC		.4	.7		1.1	3.5	5.0					2.2	8.5	10.9
II + III	5.3	6.7	11.1	9.2	15.2	5.4	20.7	17.2	40.0	21.3	17.6	47.3	128.2	175.5
III	2.2	3.6	2.8	5.3	2.7	7.0	11.9	11.0	30.2	6.2		16.6	66.3	82.9

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	10.3	22.7	37.3	54.0	76.4	119.0	152.5	214.0	311.5			29.9	171.9	41.2
IIIA	10.0	23.2	37.8	52.7	74.2	104.0	124.0		248.0			26.6	145.0	32.6
IIIB	10.8	21.0	36.6	55.0	69.5	98.8	152.5	210.5	332.0			35.2	158.7	69.0
IIIC		24.0	40.0		66.0	105.0	148.7					42.5	126.8	93.1
II + III	10.9	21.1	39.0	55.0	76.0	108.0	160.2	205.8	300.0	426.3	528.0	32.6	248.1	89.2
III	10.2	23.9	42.0	52.5	82.0	104.3	143.2	219.7	302.0	374.0		29.3	209.4	93.8

1400 - 2100 (29224 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	36	27	7	14	10	7	7		1			94	15	109
IIIA	13	5	11	3	6	3	1					38	4	42
IIIB	2	5	2	1	2	2			1			12	3	15
IIIC	1	1	1		1				1		1	4	2	6
II + III	23	23	3	11	9	7	8	2	3	1	3	69	26	95
III	7	7	4		5	2	1	2	2		2	23	9	32

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

	TIME IN MINUTES													
CATE[illegible]Y	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	6.0	10.2	4.4	12.4	13.1	13.5	17.1		4.4			46.1	34.9	81.0
IIIA	2.0	1.7	6.8	2.8	7.7	5.5	2.4					21.0	8.0	28.2
IIIB	.5	2.0	1.5	1.0	2.7	9.5			4.4			7.5	7.9	15.4
IIIC	.3	.3	.7		1.5				5.5		12.9	2.7	18.4	21.1
II + III	4.1	8.6	1.9	9.7	11.6	12.5	19.1	7.6	15.3	7.6	66.2	36.0	128.2	164.2
III	1.4	2.2	2.6		6.3	3.4	2.3	7.1	10.1		31.7	12.9	54.7	67.2

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	10.0	22.7	37.3	53.3	78.7	115.4	146.1		261.0			29.4	139.5	44.6
IIIA	9.4	20.6	37.3	55.3	77.3	110.0	141.0					33.1	120.3	40.3
IIIB	14.0	23.4	43.5	57.0	81.0	105.0			264.0			37.4	158.0	61.7
IIIC	15.0	17.0	42.0		89.0				330.0		772.0	40.8	551.0	210.8
II + III	10.7	22.3	38.7	52.9	77.6	107.1	142.9	226.5	306.9	455.0	794.6	31.3	298.9	103.7
III	12.1	19.0	39.5		75.0	103.0	140.0	214.0	301.5		951.0	32.7	364.3	125.9

2200 - 0600 (32877 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	78	75	44	26	30	14	7	6	6	1		253	34	287
IIIA	34	31	10	15	8	16	10	8	8	5	1	98	48	144
IIIB	8	13	9	4	14	5	5	5	3	1		48	19	67
IIIC	1	1	1	2	1	2	3	1	3			6	9	15
II + III	27	37	28	15	29	20	27	15	23	14	14	136	113	249
III	14	26	13	11	9	17	18	12	14	10	4	73	75	148

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	14.6	29.7	27.3	23.1	37.4	24.6	17.4	20.2	30.9	9.0		132.1	100.7	232.7
IIIA	6.6	12.1	6.6	14.3	7.6	27.6	25.4	28.9	37.1	33.1	8.3	47.2	157.8	200.2
IIIB	1.4	5.9	6.1	3.6	18.0	9.1	12.3	9.6	24.4	7.0		35.1	62.8	98.7
IIIC	.2	.4	.6	1.7	1.1	3.5	7.0	3.3	15.4			4.0	28.5	31.5
II + III	5.3	14.2	17.3	13.5	36.8	34.3	68.7	51.2	119.2	95.6	144.6	87.1	509.5	596.6
III	2.6	10.8	8.7	10.4	10.8	28.9	44.9	42.3	69.2	66.7	39.9	43.4	291.9	335.3

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	11.2	23.7	37.2	53.4	74.7	105.4	149.3	201.5	305.3	478.0		31.3	177.6	48.7
IIIA	11.6	23.3	39.6	57.3	76.2	103.4	152.5	216.6	278.4	397.0	498.0	29.5	197.2	83.4
IIIB	10.5	27.0	40.9	54.3	77.1	108.6	147.6	191.3	292.2	417.0		43.9	198.4	88.4
IIIC	14.0	25.5	35.5	51.3	68.0	104.5	139.6	198.0	306.8			40.0	189.9	126.5
II + III	11.9	23.1	37.0	53.8	76.2	102.8	152.7	204.9	300.6	409.6	619.6	38.4	270.3	143.8
III	11.3	25.0	40.2	56.9	71.8	102.0	149.7	211.5	296.4	400.2	598.8	35.6	253.3	135.9

ALL (87672 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	181	144	87	61	98	23	25	7	9	1		531	65	596
IIIA	75	54	33	25	15	20	11	8	9	5	1	202	54	256
IIIB	20	24	16	17	19	11	12	5	8	1		96	37	133
IIIC	2	2	3	2	2	4	4	1	3		1	11	13	24
II + III	79	79	48	36	50	30	45	22	34	18	21	292	170	462
III	34	42	21	17	16	23	24	17	22	11	6	130	103	233

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

	TIME IN MINUTES														
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL	
II	32.1	55.8	54.0	54.5	73.4	42.0	62.4	23.7	45.5	8.0		269.7	181.4	451.1	440.30
IIIA	13.3	20.8	21.0	23.2	19.0	34.7	27.4	28.9	41.3	33.1	8.3	97.6	170.9	264.0	
IIIB	3.7	9.9	10.7	15.6	24.3	19.1	29.9	16.6	39.6	7.0		64.0	116.0	179.7	
IIIC	.5	.8	2.0	1.7	2.4	7.0	9.3	3.3	15.4		12.9	7.3	44.4	52.4	
II + III	14.7	29.5	30.3	32.3	63.7	52.2	114.5	75.9	170.6	124.5	228.4	170.4	768.9	938.4	
III	6.3	16.6	14.1	15.7	19.8	39.3	59.2	60.4	109.4	72.9	71.6	72.5	412.9	485.3	

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	10.6	23.2	37.2	53.6	73.9	109.6	149.7	203.3	301.8	478.0		30.5	167.4	45.4
IIIA	10.7	23.1	38.2	55.7	76.0	104.2	149.5	216.6	275.0	397.0	495.0	29.0	189.9	81.9
IIIB	11.0	24.7	40.0	54.9	76.8	104.4	149.7	199.0	297.0	417.0		40.0	188.5	81.1
IIIC	14.3	23.0	38.6	51.3	72.8	104.7	149.0	198.0	310.7		772.0	40.7	294.8	130.6	
II + III	11.2	22.4	37.8	53.9	76.4	104.3	152.6	207.0	301.0	414.9	652.5	33.0	270.3	121.6	
III	11.1	23.7	40.4	53.4	74.1	102.5	148.0	213.2	298.4	397.8	716.2	33.4	240.5	123.0	

PHILADELPHIA, INTERNATIONAL

TABLE XIII - TEMPERATURE < 33 DEGREES (F), 0700 - 1300 (25571 OBSERVATION HOURS) JANUARY 1956 - DECEMBER 1965

FREQUENCY OF OCCURRENCE

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	10	4	4	5	5		2		2			28	4	32
IIIA	5	4		2	2							13		13
IIIB		1		1			2	1				2	3	5
IIIC														
II + III	6	2	3	3	3	1		1	3	1		17	6	23
III	2	1	1	1			1	1	1			5	3	8

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	1.7	1.7	2.4	4.7	6.7		5.5		10.4			17.2	15.9	33.1
IIIA	.9	1.6		1.8	2.2							6.2		6.2
IIIB		.3		.8			5.3	3.9				1.1	9.2	10.3
IIIC														
II + III	1.1	.9	1.8	2.7	3.7	1.8		3.4	15.5	7.1		10.2	27.6	38.0
III	.5	.3	.7	.8			2.8	3.7	5.0			2.2	11.4	13.6

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	10.4	25.8	35.8	56.0	80.6		165.0		311.5			36.9	238.3	62.1
IIIA	11.0	23.8		52.5	66.0							28.5		28.5
IIIB		19.0		47.0			157.5	235.0				33.0	183.3	123.2
IIIC														
II + III	10.7	25.5	36.7	54.3	74.7	105.0		208.0	310.0	428.0		34.0	278.0	99.1
III	14.0	19.0	40.0	47.0			165.0	220.0	297.0			26.8	227.3	102.0

1400 - 2100 (29224 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	8	7		2	2	2						19	2	21
IIIA		1			1	1						2	1	3
IIIB	1	1										2		2
IIIC		1										1		1
II + III	7	6		2	1	2					1	16	3	19
III	1	2						1				3	1	4

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	1.4	2.8		1.8	2.5	3.9						8.5	3.9	12.4
IIIA		.5			1.4	1.9						1.9	1.9	3.8
IIIB	.2	.3										.5		.5
IIIC		.3										.3		.3
II + III	1.3	2.3		1.8	1.3	3.9					10.5	6.6	14.4	21.0
III	.2	.6						4.0				.8	4.0	4.8

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	10.6	23.7		53.5	75.0	118.0						26.7	118.0	35.4
IIIA		30.0			86.0	111.0						58.0	111.0	75.3
IIIB	13.0	17.0										15.0		15.0
IIIC		17.0										17.0		17.0
II + III	11.1	22.5		53.5	77.0	118.0					628.0	24.8	288.0	66.4
III	13.0	17.0						238.0				15.7	238.0	71.3

2200 - 0600 (32877 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	5	4	4	1	4	3	3		1	1		18	8	26
IIIA	6	2	1	3	2	1	3	1				14	5	19
IIIB	3	2	1		5		1					11	1	12
IIIC					1		1		1			1	2	3
II + III	2	4	3	2	3	3	7	1		3	1	14	15	29
III	4			1	2		3	1	2			7	8	15

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	.7	1.5	2.8	1.0	5.4	5.3	7.4		4.6	8.0		11.4	25.2	36.6
IIIA	1.1	.8	.7	3.0	2.6	1.8	7.6	3.1				8.5	12.6	21.3
IIIB	.5	1.0	.8		6.0		2.2					8.2	3.4	12.1
IIIC					1.1		2.2		5.8			1.1	6.8	7.9
II + III	.4	1.4	2.1	2.0	4.1	5.0	17.9	3.7		22.1	14.0	9.9	62.7	72.6
III	.9			1.0	2.4		12.2	3.1	11.6			4.3	26.9	31.2

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	8.4	21.8	42.0	60.0	81.5	105.7	148.7		273.0	478.0		37.9	189.3	84.5
IIIA	11.0	25.0	41.0	60.0	78.5	110.0	152.3	188.0				36.4	131.0	67.3
IIIB	10.3	29.5	45.0		71.8		155.0					44.9	204.0	60.3
IIIC					68.0		135.0		349.0			68.0	202.7	149.4
II + III	11.5	20.5	42.0	60.0	81.7	99.7	153.6	220.0		442.0	841.0	42.6	250.7	150.2
III	12.8			60.0	72.5		146.2	188.0	347.5			36.6	201.8	124.7

ALL (87672 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	23	15	8	8	11	5	9		3	1		65	14	79
IIIA	10	9	1	4	5	1	3	1				25	5	30
IIIB	4	4	1	1	5		3	1				15	4	19
IIIC		1			1		1		1			2	2	4
II + III	15	12	6	7	7	6	7	2	3	4	2	47	24	71
III	7	3	1	2	2		6	3	3			15	12	27

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	3.9	5.9	5.2	7.8	14.7	9.2	12.9		14.9	8.0		37.1	45.1	82.1
IIIA	1.8	2.0	.7	3.8	6.2	1.8	7.6	3.1				14.3	12.5	26.0
IIIB	.7	1.6	.8	.8	6.0		7.5	3.9				9.6	12.6	22.1
IIIC		.3			1.1		2.2		5.8			1.7	6.8	8.5
II + III	2.8	4.5	3.9	6.5	9.1	10.7	17.9	7.1	19.5	29.2	24.5	26.8	104.9	131.6
III	1.5	.9	.7	1.8	2.4		14.9	10.8	16.5			7.3	42.2	49.5

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	10.0	23.7	38.9	55.9	79.9	110.6	158.2		298.7	478.0		34.2	193.1	62.4
IIIA	10.9	24.4	41.0	56.5	76.2	110.0	152.5	188.0				33.8	147.4	52.1
IIIB	11.0	23.8	45.0	47.0	71.8		149.3	239.0				30.2	188.5	69.8
IIIC		17.0			68.0		135.0		349.0			51.0	203.7	127.3
II + III	11.0	22.3	39.3	55.7	78.0	106.7	153.6	218.5	310.0	438.5	734.5	34.1	262.2	111.2
III	13.1	17.7	40.0	53.5	72.5		149.5	219.3	330.7			29.1	211.2	110.0

79.0*

PHILADELPHIA, INTERNATIONAL

TABLE XIV - TEMPERATURE < 33 DEGREES (F), WITH PCPN, NO PRECIPITATION, AND WIND < 9 KNOTS. JANUARY 1956 - DECEMBER 1965

0700 - 1300 (23971 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	6	2	1	2	1							12		12
IIIA	3	4			1							8		8
IIIB		1		1			2					2	2	4
IIIC														
II + III	2		1	1	1				1			5	1	6
III	1	1	1				1	1				3	2	5

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	1.1	.9	.8	1.8	1.3							5.8		5.8
IIIA	.5	1.4			1.2							3.2		3.2
IIIB		.3		.8			5.3					1.1	5.3	6.4
IIIC														
II + III	.5		.8	.9	1.0				4.9			3.1	4.9	8.0
III	.2	.3	.7				2.8	3.7				1.2	6.4	7.6

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	11.2	26.0	45.0	55.0	75.0							29.1		29.1
IIIA	9.0	23.5			70.0							23.9		23.9
IIIB		19.0		47.0			157.5					33.0	157.5	95.3
IIIC														
II + III	13.5		45.0	53.0	61.0				295.0			37.2	295.0	80.2
III	13.0	19.0	40.0				165.0	220.0				24.0	192.5	91.4

1400 - 2100 (29224 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	1	1										2		2
IIIA		1			1							2		2
IIIB	1				1							2		2
IIIC														
II + III		2			1						1	3	1	4
III	1				1			1				2	1	3

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	.1	.4										.5		.5
IIIA		.4			1.4							1.8		1.8
IIIB	.2				1.5							1.7		1.7
IIIC														
II + III		.7			1.5						10.5	2.2	10.5	12.7
III	.2				1.5			4.0				1.7	4.0	5.7

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	7.0	23.0										15.0		15.0
IIIA		23.0			86.0							54.5		54.5
IIIB	13.0				90.0							51.5		51.5
IIIC														
II + III		21.5			90.0						628.0	44.3	628.0	190.3
III	13.0				90.0			238.0				51.5	238.0	113.7

2200 - 0600 (32877 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	5	4	2	1	1	2	1					13	3	16
IIIA	5	2	1	1	4	1	1	1				13	3	16
IIIB	2	2	1		4		1					9	1	10
IIIC					1		1		1			1	2	3
II + III	2	5	1	2	1	1	5	1		2		11	9	20
III	2			1	4		2	1	2			7	5	12

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	.9	1.6	1.3	1.0	1.4	3.8	3.0					6.0	6.8	12.8
IIIA	1.0	.9	.6	1.0	3.2	1.9	2.8	3.1				8.2	7.8	15.1
IIIB	.3	1.0	.6		4.7		2.2					6.7	3.4	10.6
IIIC					1.1		2.2		5.8			1.1	6.8	7.5
II + III	.4	1.9	.6	2.0	1.3	1.7	12.8	3.4		14.1		6.1	32.0	38.0
III	.4			1.0	3.2		3.1	3.1	11.6			0.6	19.8	20.3

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	10.2	23.8	37.5	60.0	81.0	113.0	180.0					27.8	133.3	48.0
IIIA	11.4	25.5	34.0	60.0	77.8	115.0	165.0	188.0				27.8	136.0	56.7
IIIB	8.0	29.5	45.0		71.0		133.0					44.9	204.0	63.4
IIIC					68.0		133.0		349.0			68.0	203.7	149.4
II + III	10.5	22.6	34.0	60.0	75.0	100.0	159.2	209.0		424.0		33.0	213.2	114.1
III	11.9			60.0	77.5		151.9	188.0	347.9			36.1	237.2	131.6

ALL (87672 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	12	7	3	3	2	2	1					27	3	30
IIIA	8	5	1	1	6	1	1	1				21	3	24
IIIB	3	3	1	1	9		3					13	3	16
IIIC					1		1		1			1	2	3
II + III	4	7	2	3	3	1	9	1	1	2	1	19	11	30
III	4	1	1	1	5		3	3	2			12	8	20

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	2.1	2.8	2.0	2.8	2.6	3.8	3.0					12.4	6.8	19.1
IIIA	1.4	2.9	.6	1.0	7.8	1.9	2.8	3.1				18.2	7.8	18.4
IIIB	.3	1.3	.8	.8	6.2		7.3					9.6	8.7	18.6
IIIC					1.1		2.2		3.8			1.1	6.8	7.3
II + III	.8	2.6	1.3	2.9	3.8	1.7	12.8	3.4	4.9	14.1	10.5	11.4	47.4	58.7
III	.8	.3	.7	1.0	6.7		7.8	10.8	11.6			9.5	30.2	39.6

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	10.4	24.3	40.0	56.7	78.0	113.0	180.0					27.4	135.3	38.2
IIIA	10.5	24.0	34.0	60.0	77.8	115.0	165.0	188.0				33.0	136.0	46.0
IIIB	9.7	26.0	45.0	47.0	76.8		140.3					44.1	173.8	69.9
IIIC					68.0		133.0		345.0			68.0	203.7	149.4
II + III	12.0	22.3	39.5	57.7	79.3	100.0	159.2	209.0	295.0	424.0	628.0	35.9	258.4	117.3
III	12.3	19.0	40.0	60.0	80.0		156.0	219.3	347.9			47.3	226.1	118.9

PHILADELPHIA, INTERNATIONAL

TABLE XV - TEMPERATURE < 33 DEGREES (F), WITH FOG, NO PRECIPITATION, AND WIND 9-12 KNOTS.

0700 - 1300 (25971 OBSERVATION HOURS) JANUARY 1956 - DECEMBER 1965

FREQUENCY OF OCCURRENCE

	TIME IN MINUTES														
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL	
II	2											2		2	
IIIA	1											1		1	
IIIB															
IIIC															
II + III	2											2		2	
III															

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

	TIME IN MINUTES														
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL	
II	.3											.3		.3	
IIIA	.2											.2		.2	
IIIB															
IIIC															
II + III	.3											.3		.3	
III															

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

	TIME IN MINUTES														
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL	
II	10.0											10.0		10.0	
IIIA	10.0											10.0		10.0	
IIIB															
IIIC															
II + III	10.0											10.0		10.0	
III															

1400 - 2100 (29224 OBSERVATION HOURS)

NO OCCURRENCE OF DATA

2200 - 0600 (32877 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

	TIME IN MINUTES														
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL	
II	3	1		1		1						5	1	6	
IIIA	2		1	1	1	1						5	1	6	
IIIB															
IIIC															
II + III	3	1		2	1	1						7	1	8	
III	1			1	1							3		3	

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

	TIME IN MINUTES														
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL	
II	.2	.4		.8		1.9						1.4	1.9	3.3	
IIIA	.3		.6	.8	1.4	1.9						2.8	1.9	4.0	
IIIB															
IIIC															
II + III	.4	.4		1.6	1.4	1.9						3.8	1.9	5.7	
III	.2			.8	1.4							2.4		2.4	

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

	TIME IN MINUTES														
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL	
II	4.7	21.0		30.0		113.0						17.0	113.0	33.0	
IIIA	9.0		35.0	47.0	81.0	113.0						35.0	113.0	39.3	
IIIB															
IIIC															
II + III	7.7	21.0		48.5	89.0	113.0						32.3	113.0	42.4	
III	13.0			47.0	81.0							47.0		47.0	

ALL (87672 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

	TIME IN MINUTES														
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL	
II	5	1		1		1						7	1	8	
IIIA	2		1	1	1	1						5	1	6	
IIIB															
IIIC															
II + III	5	1		2	1	1						9	1	10	
III	1			1	1							3		3	

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

	TIME IN MINUTES														
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL	
II	.6	.4		.8		1.9						1.8	1.9	3.6	2.3
IIIA	.3		.6	.8	1.4	1.9						2.8	1.9	3.7	
IIIB															
IIIC															
II + III	.7	.4		1.6	1.4	1.9						4.1	1.9	6.0	
III	.2			.8	1.4							2.4		2.4	

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

	TIME IN MINUTES														
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL	
II	6.8	21.0		30.0		113.0						15.0	113.0	27.3	
IIIA	10.0		35.0	47.0	81.0	113.0						33.0	113.0	39.3	
IIIB															
IIIC															
II + III	8.6	21.0		48.5	89.0	113.0						27.3	113.0	35.9	
III	13.0			47.0	81.0							47.0		47.0	

PHILADELPHIA, INTERNATIONAL

TABLE XVI - TEMPERATURE < 29 DEGREES (F).

0700 - 1300 (25571 OBSERVATION HOURS) JANUARY 1956 - DECEMBER 1965

FREQUENCY OF OCCURRENCE

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	6	2	3	3	1				1			15	1	16
IIIA	1	2		1	1							5		5
IIIB		1		1								2		2
IIIC														
II + III	5	1	1	3			1			1		10	2	12
III				1		1						1	1	2

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	1.2	1.0	2.0	2.9	1.3				9.6			8.3	9.6	13.9
IIIA	.2	1.0		.8	1.2							3.1		3.1
IIIB		.5		.8								1.3		1.3
IIIC														
II + III	1.0	.5	.7	2.9			2.8			7.1		5.0	9.9	14.9
III				.8		1.7						.8	1.7	2.5

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	12.0	29.0	39.3	57.7	75.0				338.0			38.1	338.0	52.1
IIIA	10.0	29.0		47.0	70.0							37.0		37.0
IIIB		30.0		47.0								38.5		38.5
IIIC														
II + III	11.8	28.0	39.0	57.7			169.0			428.0		29.9	296.3	74.3
III				47.0		100.0						47.0	100.0	73.5

1400 - 2100 (29224 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	4	3			2	2						9	2	11
IIIA						1							1	1
IIIB	1	1										2		2
IIIC														
II + III	3	4			1	2						8	2	10
III	1	1										2		2

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	.6	1.3			2.5	3.9						4.4	3.9	8.3
IIIA						2.0							2.0	2.0
IIIB	.2	.3										.5		.5
IIIC														
II + III	.5	1.6			1.3	3.9						3.4	3.9	7.3
III	.2	.3										.5		.5

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	9.3	25.3			75.0	118.0						29.2	118.0	45.4
IIIA						120.0							120.0	120.0
IIIB	13.0	17.0										15.0		15.0
IIIC														
II + III	10.0	24.0			77.0	118.0						25.4	118.0	43.9
III	13.0	17.0										15.0		15.0

2200 - 0600 (32877 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	2	5	2	1	3	1	1			1		13	3	16
IIIA	3	1		1	2							7		7
IIIB	1	2			3							6		6
IIIC				1	1		1		1			2	2	4
II + III	1	3	2	2	3	3	2			3		11	8	19
III	2			1	2		1		2			5	3	8

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	.3	1.8	1.4	1.0	4.1	1.6	2.2			8.0		8.4	11.7	20.3
IIIA	.6	.4		1.0	2.8							4.1		4.1
IIIB	.1	1.0			3.7							4.7		5.9
IIIC				1.0	1.1		2.3		5.8			2.2	8.0	9.0
II + III	.1	1.1	1.4	2.0	4.1	5.6	5.2			22.1		8.6	32.8	41.5
III	.4			1.0	2.4		2.8		11.6			3.8	14.4	18.2

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	10.0	21.4	43.0	60.0	81.7	94.0	130.0			478.0		39.8	234.0	76.3
IIIA	11.3	24.0		60.0	83.0							35.0		35.0
IIIB	8.0	29.5			73.0							47.2		38.8
IIIC				60.0	68.0		135.0		349.0			65.3	240.0	135.2
II + III	8.0	21.3	40.5	60.0	81.7	111.3	132.0			442.0		47.1	246.3	130.9
III	10.5			60.0	72.5		160.0		347.5			49.2	287.7	136.1

ALL (87672 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	12	10	5	4	6	3	1		1	1		37	6	43
IIIA	4	2		2	3	1						11	1	12
IIIB	2	4		1	3							10		10
IIIC				1	1		1		1			2	2	4
II + III	9	8	3	5	4	5	3			4		29	12	41
III	3	1		2	2	1	1		2			8	4	12

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL	
II	2.2	4.0	3.4	3.9	7.8	5.5	2.2		5.6	8.0		21.3	21.3	42.6	39.00
IIIA	.7	.9		1.8	3.9	2.0						6.5	2.0	8.0	
IIIB	.4	1.8		.8	3.7							6.5		7.7	
IIIC				1.0	1.1		2.3		5.8			2.2	8.0	9.0	
II + III	1.6	3.1	2.0	4.9	5.4	9.5	7.9			29.2		17.0	46.7	63.7	
III	.6	.3		1.8	2.4	1.7	2.8		11.6			5.1	16.1	21.1	

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	10.8	24.1	40.8	58.3	78.3	110.0	130.0		338.0	478.0		34.5	212.7	59.4
IIIA	11.0	27.0		53.5	78.7	120.0						35.5	120.0	39.8
IIIB	10.5	26.5		47.0	73.0							39.0		46.0	
IIIC				60.0	68.0		135.0		349.0			65.3	240.0	135.2	
II + III	10.8	23.5	40.0	58.6	80.5	114.0	150.5			438.5		39.2	233.3	99.1	
III	11.3	17.0		53.5	72.5	100.0	160.0		347.5			37.9	240.8	105.9	

PHILADELPHIA, INTERNATIONAL

TABLE XVII - TEMPERATURE < 29 DEGREES (F), WITH FOG, NO PRECIPITATION, AND WIND < 9 KNOTS. JANUARY 1956 - DECEMBER 1969

0700 - 1300 (25571 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	3	1	1	1								6		6
IIIA	1	2			1							4		4
IIIB		1		1								2		2
IIIC														
II + III	2			1		1						3	1	4
III						1							1	1

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	.7	.5	.6	.9								2.7		2.7
IIIA	.2	1.0			1.2							2.3		2.3
IIIB		.5		.8								1.3		1.3
IIIC														
II + III	.5			.9		1.7						1.3	1.7	3.0
III						1.7							1.7	1.7

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	13.3	30.0	36.0	53.0								26.5		26.5
IIIA	10.0	29.0			70.0							34.3		34.3
IIIB		30.0		47.0								38.5		38.5
IIIC														
II + III	13.5			53.0		100.0						26.7	100.0	45.0
III						100.0							100.0	100.0

1400 - 2100 (29224 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	1											1		1
IIIA														
IIIB	1											1		1
IIIC														
II + III		1										1		1
III	1											1		1

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	.1											.1		.1
IIIA														
IIIB	.2											.2		.2
IIIC														
II + III		.3										.3		.3
III	.2											.2		.2

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	7.0											7.0		7.0
IIIA														
IIIB	13.0											13.0		13.0
IIIC														
II + III		20.0										20.0		20.0
III	13.0											13.0		13.0

2200 - 0600 (32877 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	3	3	1									7		7
IIIA	3	1			1							5		5
IIIB	1	2			3							6		6
IIIC				1	1			1		1		2	2	4
II + III	2	3		1		1		1		2		6	4	10
III	1			1	2			1		2		4	3	7

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	.6	1.2	.7									2.4		2.4
IIIA	.6	.4			1.3							2.3		2.3
IIIB	.1	1.0			3.7							4.7		5.9
IIIC				1.0	1.1		2.3		5.8			2.2	8.0	9.0
II + III	.4	1.2		1.0		2.0	5.0			14.1		2.6	19.1	21.7
III	.1			1.0	2.4		2.8		11.6			3.6	14.4	17.9

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	11.7	23.3	41.0									20.9		20.9
IIIA	12.0	23.0			76.0							27.0		27.0
IIIB	8.0	29.5			73.0							47.2		38.8
IIIC				60.0	68.0		139.0		349.0			65.3	240.0	139.2
II + III	11.5	23.3		60.0		120.0	180.0			424.0		25.5	287.9	130.1
III	8.0			60.0	72.5		168.0		347.5			33.3	287.7	193.7

ALL (87672 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	7	4	2	1								14		14
IIIA	4	2			3							9		9
IIIB	2	3		1	3							9		9
IIIC				1	1		1		1		1	2	2	4
II + III	4	4		2		2	1			2		10	3	13
III	2			1	2	1	1		2			5	4	9

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	1.4	1.7	1.3	.9								3.2		3.2
IIIA	.8	.9			2.4							4.2		4.2
IIIB	.4	1.5		.8	3.7							6.2		7.4
IIIC				1.0	1.1		2.3		5.8			2.2	8.0	9.0
II + III	.8	1.3		1.9		3.7	5.0			14.1		4.2	20.8	23.0
III	.4			1.0	2.4	1.7	2.8		11.6			3.8	16.1	19.8

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	11.7	23.0	38.5	53.0								22.3		22.3
IIIA	11.3	27.3			73.0							31.4		31.4
IIIB	10.5	29.7		47.0	73.0							41.4		40.2
IIIC				60.0	68.0		139.0		349.0			68.3	240.0	139.2
II + III	12.3	23.3		56.3		110.0	180.0			424.0		25.3	249.6	180.1
III	10.5			60.0	72.3	100.0	168.0		347.3			48.2	240.8	192.1

PHILADELPHIA, INTERNATIONAL

TABLE XVIII:- TEMPERATURE < 29 DEGREES (F), WITH FOG, NO PRECIPITATION, AND WIND 9-12 KNOTS. JANUARY 1956 - DECEMBER 1965

0700 - 1300 (23571 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II		1										1		1
IIIA		1										1		1
IIIB														
IIIC														
II + III		1										1		1
III														

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	.1											.1		.1
IIIA	.1											.1		.1
IIIB														
IIIC														
II + III	.1											.1		.1
III														

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	5.0											5.0		5.0
IIIA	5.0											5.0		5.0
IIIB														
IIIC														
II + III	5.0											5.0		5.0
III														

1400 - 2100 (29224 OBSERVATION HOURS)

NO OCCURRENCE OF DATA

2200 - 0600 (32877 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II		1										1		1
IIIA	1	1										2		2
IIIB														
IIIC														
II + III	1	1										2		2
III	1											1		1

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II		.5										.5		.5
IIIA	.2	.5										.7		.7
IIIB														
IIIC														
II + III	.2	.5										.7		.7
III	.2											.2		.2

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II		30.0										30.0		30.0
IIIA	13.0	30.0										21.5		21.5
IIIB														
IIIC														
II + III	13.0	30.0										21.5		21.5
III	13.0											13.0		13.0

ALL (87672 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	1	1										2		2
IIIA	2	1										3		3
IIIB														
IIIC														
II + III	2	1										3		3
III	1											1		1

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	.1	.5										.6		.6
IIIA	.3	.5										.8		.8
IIIB														
IIIC														
II + III	.3	.5										.8		.8
III	.2											.2		.2

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	5.0	30.0										17.5		17.5
IIIA	9.0	30.0										16.3		16.3
IIIB														
IIIC														
II + III	9.0	30.0										16.0		16.0
III	13.0											13.0		13.0

PHILADELPHIA, INTERNATIONAL

TABLE XIX - TEMPERATURE > 32 DEGREES (F). 0700 - 1300 (25971 OBSERVATION HOURS) JANUARY 1956 - DECEMBER 1965

FREQUENCY OF OCCURRENCE

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	58	38	32	16	13	2	9	1				157	12	169
IIIA	26	16	13	8	3	2	1		1			66	4	70
IIIB	11	4	5	11	2	4	4	1	1			33	10	43
IIIC		1	1		1	2	2					3	4	7
II + III	24	17	14	7	9	2	10	6	5	2	2	71	27	98
III	11	9	3	5	2	4	6	2	4	1		30	17	47

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	9.8	14.1	20.0	14.3	16.2	4.0	22.4	9.6				74.3	30.0	104.3
IIIA	4.3	6.1	8.2	7.1	4.0	3.5	2.1		4.1			28.5	9.7	38.1
IIIB	2.1	1.4	3.1	10.2	2.3	6.6	9.8	3.1	5.5			19.1	25.0	43.8
IIIC		.4	.7		1.1	3.5	5.0					2.2	8.5	10.9
II + III	4.3	5.7	9.2	6.5	11.5	3.7	26.7	20.2	24.5	14.2	17.6	97.1	106.8	143.9
III	1.8	3.6	2.1	4.5	2.7	7.0	14.9	7.0	19.5	6.2		14.7	54.6	69.3

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	10.2	22.3	37.4	53.4	74.8	119.0	149.4	214.0				28.4	149.8	37.0
IIIA	9.9	22.8	37.8	53.1	79.7	104.0	124.0		248.0			25.9	145.0	32.7
IIIB	11.2	21.5	36.6	55.7	69.5	98.8	146.3	186.0	332.0			34.8	149.8	61.1
IIIC		24.0	40.0		66.0	105.0	148.7					42.5	126.8	93.1
II + III	10.7	20.2	39.3	55.3	76.4	109.5	160.2	201.7	296.0	425.5	528.0	31.4	237.3	88.1
III	9.5	23.9	42.7	53.6	82.0	104.3	149.3	210.0	292.5	374.0		29.3	192.8	88.4

1400 - 2100 (29224 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	28	20	7	12	8	5	7		1			75	13	88
IIIA	13	5	11	3	5	2	1					37	3	40
IIIB	1	4	2	1	2	2			1			10	3	13
IIIC	1		1		1				1		1	3	2	5
II + III	16	17	3	9	8	5	9	2	2	1	4	53	23	76
III	6	5	4		5	2	1	1	2		2	20	8	28

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	4.6	7.4	4.4	10.7	10.6	9.5	17.1		4.4			37.6	30.9	68.6
IIIA	2.0	1.7	6.8	2.8	6.3	3.7	2.4					19.6	6.0	25.6
IIIB	.3	1.7	1.5	1.0	2.7	3.5			4.4			7.0	7.9	14.9
IIIC	.3		.7		1.5				5.5		12.9	2.5	18.4	20.8
II + III	2.8	6.4	1.9	7.9	10.4	8.6	21.7	7.6	10.1	7.6	55.8	29.4	111.2	140.6
III	1.2	1.7	2.6		6.3	3.4	2.3	3.2	10.1		31.7	11.7	50.7	62.4

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	9.8	22.3	37.3	53.3	79.6	114.4	146.1		261.0			30.1	142.8	46.7
IIIA	9.4	20.2	37.3	55.3	75.6	109.5	141.0					31.8	120.0	38.4
IIIB	15.0	25.0	43.5	57.0	81.0	105.0			264.0			42.1	158.0	68.8
IIIC	15.0		42.0		89.0				330.0		772.0	48.7	551.0	249.6
II + III	10.6	22.5	38.7	52.8	77.6	102.8	144.7	226.5	301.5	455.0	836.3	33.3	290.1	111.0
III	12.0	19.8	39.5		75.0	103.0	140.0	190.0	301.5		951.0	35.2	380.1	133.8

2200 - 0600 (32877 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	73	71	40	27	27	11	4	5	5			238	25	263
IIIA	29	30	10	14	5	17	7	7	8	5	1	88	45	133
IIIB	6	12	8	4	9	5	4	3	5	1		39	18	57
IIIC	1	1	1	2		2	2	1	2			5	7	12
II + III	26	33	25	16	27	19	23	12	22	10	13	127	99	226
III	11	26	13	11	8	18	13	11	11	10	4	69	67	136

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	13.9	28.2	24.5	24.1	33.3	19.3	10.0	16.8	26.0			124.0	72.1	196.1
IIIA	5.7	11.7	6.6	13.3	6.3	29.1	17.8	25.8	37.1	33.1	8.3	43.4	148.9	186.9
IIIB	1.1	5.2	5.4	3.6	12.0	9.1	9.4	9.6	24.0	7.0		27.5	58.7	86.6
IIIC	.2	.4	.6	1.7		3.5	4.8	3.3	9.9			2.8	21.7	24.2
II + III	5.2	12.9	15.2	14.5	33.9	32.5	38.5	40.2	109.8	67.2	130.6	81.5	438.7	520.2
III	2.0	10.8	8.7	10.4	9.8	30.4	32.6	39.2	53.5	66.7	39.9	41.8	262.3	304.1

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	11.4	23.8	36.8	53.6	74.0	105.3	149.8	201.6	311.8			31.3	173.0	44.7
IIIA	11.8	23.3	39.5	57.1	76.0	102.8	152.9	220.7	278.4	397.0	495.0	29.6	198.5	84.3
IIIB	11.3	26.1	40.4	54.3	80.1	108.6	141.5	191.3	288.2	417.0		42.3	195.7	91.2
IIIC	14.0	25.8	35.5	51.3		104.5	144.0	198.0	297.3			33.8	186.4	121.0
II + III	12.0	23.6	38.4	54.2	75.3	102.5	132.5	201.1	299.4	403.3	602.5	38.5	265.9	138.1
III	11.1	25.0	40.2	56.9	73.3	101.4	150.4	213.6	292.0	400.2	598.8	36.3	234.9	134.2

ALL (87672 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	159	129	79	55	48	18	20	6	6			470	50	520
IIIA	67	49	33	23	11	21	8	7	9	5	1	183	51	234
IIIB	18	20	15	16	14	11	9	4	7	1		83	32	115
IIIC	2	2	3	2	1	4	3	1	3		1	10	12	22
II + III	66	67	42	32	44	26	42	20	29	13	19	251	149	400
III	28	40	20	16	15	24	20	14	17	11	6	119	92	211

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

	TIME IN MINUTES														
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL	
II	28.3	49.8	48.8	49.0	80.1	32.8	49.5	30.4	30.5			236.0	133.0	368.9	359.70
IIIA	11.9	18.6	21.0	21.4	14.1	36.2	19.9	25.8	41.3	33.1	8.3	87.2	162.1	249.9	
IIIB	3.4	8.3	9.9	14.8	18.3	19.1	21.6	12.7	34.2	7.0		54.6	99.2	153.1	
IIIC	.5	.8	2.0	1.7	1.3	7.0	7.3	3.3	15.2		12.9	6.5	41.0	48.0	
II + III	12.3	25.0	26.3	28.8	55.7	44.7	106.9	67.9	144.3	89.0	203.9	148.1	636.7	804.7	
III	5.0	16.1	13.9	14.9	18.8	40.8	49.9	49.3	83.1	72.9	71.6	68.2	367.6	435.8	

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

	TIME IN MINUTES													
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	10.7	23.1	37.1	53.5	75.1	109.3	148.4	203.7	303.3			30.1	139.5	42.6
IIIA	10.6	22.8	38.2	55.9	76.8	103.5	149.4	220.7	275.0	397.0	495.0	28.6	140.7	62.5
IIIB	11.4	24.9	39.7	55.4	78.6	104.4	144.0	190.0	293.0	417.0		39.4	186.0	79.9
IIIC	14.3	25.0	38.6	51.3	77.5	104.7	146.3	198.0	303.8		772.0	38.8	205.0	131.1
II + III	11.2	22.3	37.6	54.0	75.9	103.1	132.6	203.8	298.6	410.7	643.9	35.4	264.4	120.7
III	10.7	24.1	40.4	55.9	75.0	102.0	149.6	211.4	293.2	397.8	716.2	34.4	239.8	123.9

PHILADELPHIA, INTERNATIONAL

TABLE XX - TEMPERATURE > 32 DEGREES (F), WITH FOG, NO PRECIPITATION, AND WIND < 9 KNOTS, JANUARY 1956 - DECEMBER 1965

0700 - 1300 (25971 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	36	35	12	10	7		1					100	1	101
IIIA	25	13	14	5	3	1	1					60	2	62
IIIB	10	5	3	8	2	3	3	1				28	9	37
IIIC		1	1		1	2	2					3	4	7
II + III	16	14	4	5	7	1	10	5	1	1		40	18	58
III	9	9	3	3	2	4	9	2	1			26	16	42

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	6.1	13.2	7.4	8.9	8.6		2.2					44.3	2.2	46.4
IIIA	4.2	5.0	8.8	4.4	3.9	1.7	2.2					25.5	3.9	29.5
IIIB	1.9	1.7	1.9	7.4	2.3	5.1	12.0	9.1				13.2	20.2	33.1
IIIC		.4	.7		1.1	3.5	5.0					2.2	8.5	10.9
II + III	2.0	5.1	2.6	4.5	8.9	1.7	26.0	17.2	4.8	4.1		23.0	55.7	78.7
III	1.4	3.6	2.1	2.6	2.4	6.7	23.5	7.0	5.0			12.1	42.2	54.4

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	10.2	22.7	37.2	53.4	73.4		130.0					26.6	130.0	27.6
IIIA	10.0	23.2	37.9	52.8	77.3	104.0	132.0					25.5	118.0	28.5
IIIB	11.1	20.6	37.3	55.3	69.5	101.0	144.4	166.0				32.5	134.6	56.8
IIIC		24.0	40.0		66.0	105.0	148.7					42.5	126.8	99.1
II + III	11.9	21.7	39.3	53.8	75.9	99.0	155.9	206.8	289.0	366.0		24.5	185.7	81.4
III	9.6	24.0	42.3	52.3	71.0	100.5	156.9	210.0	300.0			28.0	158.4	77.7

1400 - 2100 (29224 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	17	10	4	4	4	3	1					39	4	43
IIIA	11	4	4	2	2							23		23
IIIB	5	3		1	1							10		10
IIIC	1		1		1				1		1	3	2	5
II + III	12	8	3	4	5	6	4			1	1	32	12	44
III	7	6	2	1	3					1	1	19	2	21

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	3.1	3.6	2.6	3.6	5.3	5.6	2.2					18.2	7.8	26.0
IIIA	2.0	1.3	2.3	1.8	2.3							9.6		9.6
IIIB	1.2	1.4		1.0	1.2							4.7		4.7
IIIC	.3		.7		1.5				5.5		11.6	2.5	17.1	19.6
II + III	2.4	2.9	2.1	3.8	6.4	10.6	9.3			6.3	12.8	17.5	39.1	56.6
III	1.7	2.2	1.3	.8	3.8					6.2	12.8	9.7	19.0	28.7

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	10.9	21.7	38.3	54.5	79.3	112.3	134.0					27.9	117.8	36.3
IIIA	11.0	18.8	34.0	53.5	70.0							25.1		25.1
IIIB	14.0	28.0		57.0	73.0							28.4		28.4
IIIC	15.0		42.0		89.0				330.0		697.0	48.7	513.5	234.6
II + III	11.8	21.8	42.7	57.0	76.2	106.3	139.8			378.0	770.0	32.9	195.4	77.2
III	14.3	21.3	38.0	47.0	76.0					369.0	770.0	30.5	569.5	81.9

2200 - 0600 (32877 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	61	51	31	20	17	7	2	2	1			180	12	192
IIIA	22	27	10	13	5	14	8	3	4	3		77	32	109
IIIB	8	8	6	4	9	5	4	1	5			35	15	50
IIIC	1	1	1	2		2	1	1	2			5	6	11
II + III	24	29	28	20	23	18	19	10	15	6	6	124	74	198
III	11	23	13	12	10	16	13	4	8	7	3	69	51	120

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	11.5	20.1	19.3	17.9	21.6	12.3	4.6	7.0	5.9			90.4	29.7	120.1
IIIA	4.3	10.4	6.6	12.0	6.2	23.9	20.6	11.4	17.4	19.3		38.7	90.2	122.0
IIIB	1.6	3.5	4.0	3.6	11.9	9.1	10.8	3.1	24.0			24.8	47.0	70.9
IIIC	.2	.4	.6	1.7		3.5	2.2	3.3	9.9			2.8	18.8	22.6
II + III	5.0	11.0	17.7	18.3	29.1	31.3	49.3	34.9	74.5	40.9	59.6	81.1	290.5	371.6
III	2.2	9.2	8.7	10.8	12.1	27.5	39.7	14.4	38.0	48.1	28.7	43.0	188.4	231.4

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	11.3	23.7	37.4	53.8	76.1	105.1	137.5	208.5	351.0			30.1	148.3	37.5
IIIA	11.8	23.1	39.7	55.2	74.2	102.4	154.8	228.0	261.5	386.0		30.1	149.0	67.2
IIIB	11.6	26.3	40.3	54.3	79.2	108.6	161.8	188.0	288.2			42.4	188.1	85.0
IIIC	14.0	24.0	37.0	51.3		104.5	138.5	198.0	297.3			33.4	188.4	123.1
II + III	12.6	22.7	37.9	53.0	75.9	104.4	155.8	209.4	297.9	408.5	595.8	30.3	255.5	112.6
III	11.7	24.0	40.2	54.2	72.3	103.1	155.5	216.3	285.0	395.3	574.0	37.4	221.6	113.7

ALL (87672 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	114	96	47	34	28	10	4	2	1			319	17	336
IIIA	57	43	26	18	9	15	9	3	4	3		153	34	187
IIIB	23	16	10	13	13	8	9	2	5			75	24	99
IIIC	2	2	2	2	1	4	3	1	3		1	9	12	21
II + III	46	51	35	29	33	25	25	13	14	8	7	196	104	300
III	27	38	18	16	15	20	22	6	9	8	4	114	69	183

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL	
II	20.7	37.0	29.3	30.5	38.4	17.9	9.0	7.0	5.9			192.9	39.7	192.5	186.09
IIIA	10.3	16.3	16.4	16.4	11.2	25.6	22.8	11.4	17.4	19.3		78.8	94.1	187.0	
IIIB	4.8	6.6	6.6	11.9	16.7	14.1	22.9	6.2	24.8			46.2	71.8	118.0	
IIIC	.9	.8	1.3	1.7	1.3	7.0	7.2	3.3	19.2		11.6	5.9	40.6	48.9	
II + III	9.4	19.0	22.5	26.6	44.3	43.6	84.6	52.1	79.2	59.3	72.4	121.7	389.3	500.9	
III	5.3	15.0	12.1	14.2	18.2	34.2	57.2	21.4	43.0	52.3	41.8	64.8	249.6	314.4	

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	10.9	23.1	37.4	53.8	75.9	107.3	134.8	208.8	351.0			28.7	148.8	34.4
IIIA	10.8	22.7	37.9	54.6	74.3	102.5	152.2	228.0	261.8	386.0		27.4	146.0	50.4
IIIB	11.9	24.8	39.4	55.1	77.2	109.8	152.4	187.0	291.0			36.9	177.8	71.9
IIIC	14.3	24.0	39.8	51.3	77.5	104.7	142.6	198.0	303.8		697.0	38.9	269.2	130.7	
II + III	12.2	22.3	38.5	53.0	75.9	104.6	155.9	208.9	297.1	399.4	620.7	37.2	222.3	101.4	
III	11.7	23.6	40.3	53.4	72.9	102.6	156.0	214.2	286.7	392.0	623.0	34.1	217.1	103.1	

PHILADELPHIA, INTERNATIONAL

TABLE XXI - TEMPERATURE > 32 DEGREES (F), WITH FOG, NO PRECIPITATION, AND WIND 9-12 KNOTS. JANUARY 1956 - DECEMBER 1965

0700 - 1300 (25971 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	3	4	3	1								11		11
IIIA	2	2	1									5		5
IIIB			1									1		1
IIIC					1							1		1
II + III	4	5	3	1			1					13	1	14
III	1	2				1						3	1	4

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	.5	1.6	2.1	1.0								5.2		5.2
IIIA	.3	.6	.5									1.2		1.2
IIIB			.5									.5		.5
IIIC					1.3							1.3		1.3
II + III	.5	1.8	2.1	1.0			2.9					9.4	2.3	7.6
III	.1	.6				1.8						.7	1.8	2.5

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	9.0	24.5	41.3	60.0								28.1		28.1
IIIA	8.0	18.0	31.0									14.6		14.6
IIIB			31.0									31.0		31.0
IIIC					75.0							75.0		75.0
II + III	8.0	21.0	41.3	60.0			139.0					24.7	139.0	32.6
III	5.0	18.0				106.0						13.7	106.0	36.8

1400 - 2100 (29224 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	3	1										4		4
IIIA	4											4		4
IIIB		1	1									2		2
IIIC														
II + III	5	2	1									8		8
III	2	1	1									4		4

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	.6	.5										1.1		1.1
IIIA	.8											.8		.8
IIIB		.3	.8									1.0		1.0
IIIC														
II + III	1.1	.8	.8									2.7		2.7
III	.5	.4	.8									1.6		1.6

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	12.3	27.0										16.0		16.0
IIIA	11.5											11.5		11.5
IIIB		16.0	45.0									30.5		30.5
IIIC														
II + III	12.8	25.0	45.0									19.9		19.9
III	13.5	23.0	45.0									23.8		23.8

2200 - 0600 (32877 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	4	4	1	1	2							12		12
IIIA	2	4	2	1	1							10		10
IIIB	1											1		1
IIIC														
II + III	6	5	1	4	2							18		18
III	2	3	2	1								8		8

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	.8	1.5	.6	.9	2.3							6.0		6.0
IIIA	.5	1.7	1.4	.8	1.2							5.1		5.1
IIIB	.3											.3		.3
IIIC														
II + III	1.3	2.2	.8	3.5	2.3							10.0		10.0
III	.5	1.4	1.4	.8								4.0		4.0

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	11.8	22.3	33.0	52.0	68.5							29.8		29.8
IIIA	13.5	25.0	41.0	47.0	69.0							30.3		30.3
IIIB	15.0											15.0		15.0
IIIC														
II + III	12.8	26.2	45.0	52.0	68.5							33.2		33.2
III	15.0	27.0	41.0	47.0								30.0		30.0

ALL (87672 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	10	9	4	2	2							27		27
IIIA	6	6	3	1	1							17		17
IIIB	1	1	2									4		4
IIIC					1							1		1
II + III	15	12	5	3	2		1					39	1	40
III	3	6	3	1		1						13	1	16

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL	
II	1.9	3.6	2.6	1.9	2.3							12.2		12.2	10.6*
IIIA	1.1	2.3	1.9	.8	1.2							6.5		6.5	
IIIB	.3	.3	1.3									1.8		1.8	
IIIC					1.3							1.3		1.3	
II + III	2.9	4.8	3.6	4.5	2.3		2.3					18.0	2.3	20.2	
III	1.0	2.3	2.1	.8		1.8						6.3	1.8	8.0	

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

TIME IN MINUTES

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	11.1	22.8	39.3	56.0	68.5							27.1		27.1
IIIA	10.8	22.7	37.7	47.0	69.0							22.8		22.8
IIIB	15.0	16.0	38.0									26.8		26.8
IIIC					75.0							75.0		75.0
II + III	11.5	22.8	42.8	53.6	68.5		139.0					27.6	139.0	30.3
III	12.4	23.3	42.3	47.0		106.0						25.1	106.0	30.1

Systems Research and Development Service, Federal Aviation Administration, Washington, D. C., CLIMATOLOGICAL SUMMARIES, VISIBILITIES BELOW 1/2 MILE AND CEILINGS BELOW 200 FEET, by ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION, FINAL REPORT, June 1969, 41 volumes of 29 pages each. (Contract No. FA-67-WAI-129, Project 197-641-01R, Report No. RD-69-22)

Unclassified Report

This report consists of 41 volumes of climatological data for 41 different major airports. Ceiling, visibility, wind, and weather information are grouped by various periods of the day and by various temperature and wind categories. Various weather and landing system categories are tabulated, in most cases from 10 years of data, as aids for making decisions affecting landing systems and fog dissipation at these 41 air terminals.

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IV. Report No. RD 69-22

Descriptors

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All-Weather Aviation
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